

Future-Focused Education

Indiana, many communities boast of unemployment rates below 3% and, while it looks like a positive trend, the reality is that many of the companies located in those communities are being held back due to an insufficient workforce. **One Southern Indiana**, a New Albany-based business advocacy group, reported that manufacturers and trucking companies have a combined 900,000 unfilled positions.

Careers today require advanced knowledge and different skills from those needed just a generation ago. It is critical that Hoosiers have the skills needed by business and industry—not only to spur economic growth within Indiana, but also to rebuild Indiana's middle class and improve public health and well-being.

Indiana employers need the State's education system to prepare students for the demands and complexities of the global economy. Study after study cites evidence of a widening skills gap. A 2015 U.S. survey showed half of business owners had trouble finding employees who were qualified for positions at their firms. Employers point to serious deficiencies in the skills of recent graduates they've hired, including adaptability, communication skills, and the ability to tackle complex problems.

Business demand for systems thinking skills

Over the last several years, the understanding of "systems" has increasingly become a core concept found within most state's science standards. Research has shown that once students begin to see interconnections and develop systems thinking skills, their systemic perspective crosses over into other areas of study. They begin to see relationships between ideas taught in various subject areas— independent of the degree of curricula integration.

Understanding the inter-dependencies within our natural systems is the key that unlocks deeper awareness about how we are each connected to our environment. The tools and habits of systems thinking help us to identify when our or others' short-term solutions may have dangerous long-term consequences. It can help us carefully contemplate our own assumptions and ways of thinking; to perform rigorous analysis, as well as deeper personal reflection. These all are important skills to equip 21st century learners to deal with the social, economic, political, and environmental complexities they are inheriting—much of which is the result of less-than-systemic thinking.

<https://thesystemsthinker.com/revitalizing-the-schools-a-systems-thinking-approach/>

Related resources from the Wisconsin DOE

- [Project WILD and Project WET](#) – Interesting document about teaching systems thinking
- [Education for Sustainability](#) Teacher toolkit with systems thinking resources

National Action Plan

[National Action Plan for Sustainability Education \(The Center for Green Schools, 2014\)](#)

Ensuring that today's children will have the knowledge, skills, and mindset necessary to thrive in an uncertain future requires a different model of education. Education for sustainability (EfS) empowers students to make decisions that balance the need to preserve healthy ecosystems with the need to promote vibrant economies and equitable social systems for all generations to come. Schools across the country and at all grade levels currently satisfy curricular and achievement requirements and providing learning experiences that prepare students for the world they will inherit. Studies have shown that students who learn in the context of EfS are found to be more motivated, more attentive, and actively engaged in their own learning. Additionally, EfS has been proven to increase connections between students and their communities, and promote healthy lifestyles and school environments. (Barratt Hacking; [Gayford, 2009](#); [R. McKeown and V. Nolet, 2013](#); [Place-based Education Evaluation Collaborative. 2010](#))

Case Studies

[Crellin Elementary, Oakland, Maryland](#)

- <http://www.edutopia.org/school/crellin-elementary-school>

[Ypsilanti, Michigan Community Schools](#)

[Merrillville High School, IN](#)

[The Power of Relevance Place](#)- Place and community-based education injects value and meaning into the school experience. We see its benefits time and again in higher levels of student engagement, civic participation, and environmental stewardship. We also see teachers revitalized as they engage in work that matters.

Green Schools – Financial benefit to taxpayers

Green schools are better for budgets because they are designed to save money over the life span of the school building, while providing a healthy environment for students.

<https://www.centerforgreenschools.org/green-schools-are-better-budgets>

If all new U.S. school construction and renovation went green today, the total energy savings alone would be \$20 billion over the next 10 years. Additionally, according to [Greening America's Schools: Costs and Benefits](#) by Greg Kats, green schools use 33 percent less energy and 32 percent less water than conventionally constructed schools, significantly reducing utility costs over the average 42-year life cycle of a school.

If you are conducting a green school renovation, you can expect to experience a near 10 percent decrease in operational costs in the first year, according to the 2012 [McGraw Hill World Green Building study](#).

International Academic Success through Learning for Sustainability

Manitoba Province, Canada

Manitoba Education and Training's commitment to ESD can be found on its website (<http://www.edu.gov.mb.ca/edu/mandate.html>)

http://www.edu.gov.mb.ca/k12/esd/pdfs/leadership_council.pdf

MISSION: To ensure that all Manitoba's children and youth have access to an array of educational opportunities such that every learner experiences success through relevant engaging and high quality education that prepared them for lifelong learning and citizenship in a democratic, socially just and sustainable society.

Scotland April, 2017 Findings related to the integration of EfS in Scottish schools include:

1. Enhanced learning and motivation and readiness to learn.
2. Increase in development of skills for life, learning and work.
3. Increase in confidence
4. Improved reputation and standing of schools in their communities
5. Improved staff morale, wellbeing, and motivation.

In UNESCO study findings of 18 countries:

<file:///C:/Users/faye/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/0FCQM03L/Lfs%20and%20Attainment%20-%20Lfs%20Research%20Briefings%20-%20No.1.pdf>

This international study revealed similar results, with some variations between the 18 nations. The specific findings include:

1. Academic performance increased in ESD schools in many high---scoring PISA4 countries. ESD promotes acquisition of additional relevant knowledge and skills, as well as perspectives and values.
2. ESD gives more meaning to curricula, which leads students to be more engaged, committed, and self---confident.
3. ESD helps prepare students for an uncertain future by instilling flexible competencies, empathy, and creativity.

Viet Nam -Ha Noi, 27-31 March 2017 – Viet Nam hosted a national workshop within the Science, Technology, Engineering and Mathematics (STEM) Education 2015. STEM education is an essential pillar for sustainable development and participatory citizenship. Women's involvement in science and technology not only stimulates innovation, but also benefits their social engagement and domestic work.

Viet Nam's enrollment rate of female students at the university level has increased from 30.29 per cent to 52.49 per cent between the 2012-2013 and 2013-2014 academic years.

<http://www.un.org.vn/en/unesco-agencypresscenter1-100/4388-viet-nam-takes-action-towards-stem-education-for-sustainable-development.html>